MAD SCIENTIST 2017

Visualizing Multi-Domain Warfare

In 2030-2050

July 25th & 26th 2017

Georgetown University

Washington, D.C.

INVITED SPEAKERS

General David G. Perkins

Commanding General

U.S. Army Training and Doctrine Command

Fort Eustis, Virginia

General David G. Perkins assumed duties as Commander, United States Army Training and Doctrine Command on March 14, 2014 after serving as Commander, United States Army Combined Arms Center, Fort Leavenworth, Kansas.

General Perkins was the 21st Commander of the United States Army Combined Arms Center from November 2011 to February 2014, where he was the lead for synchronizing leader development across the Army, the management of the Army's training support and training development enterprises, and the development and integration of the doctrine the Army uses to fight and win our Nation's wars.

Previously General Perkins served as the Commanding General of the 4th Infantry Division (Mechanized) where his primary mission was to assist and develop the Iraqi Security Forces in U.S. Division-North to take security responsibility following the transition of U.S. Forces from Iraq. General Perkins also served as the Brigade Commander for the 2nd Brigade, 3rd Infantry Division (Mechanized) during the invasion of Iraq, commanding the unit's "Thunder Run" into Baghdad and subsequent stability operations in support of Operation Iraqi Freedom, where he earned the Silver Star, the nation's third highest award for valor.

General Perkins was commissioned into the Armor Branch upon graduation from the United States Military Academy at West Point in 1980. In addition to the posts noted above, he held leadership positions in armor and mechanized infantry units in Europe, the United States, and the Middle East. He also held a number of key staff assignments, including Deputy Chief of Staff for Strategic Effects for Multi-National Forces-Iraq, Deputy Chief of Staff for Operations for United States Army Europe, and Special Assistant to the Speaker of the House, United States House of Representatives.

General Perkins holds a Bachelor of Science Degree from the United States Military Academy, a Masters Degree in Mechanical Engineering from the University of Michigan, and a Masters Degree in National Security and Strategic Studies from the Naval War College.

General Perkins was born in New Hampshire.

COL (Ret) David Maxwell

Associate Director

Center for Security Studies

Edmund A. Walsh School of Foreign Service

Georgetown University

David S. Maxwell is the Associate Director of the Center for Security Studies and the Security Studies Program, Edmund A. Walsh School of Foreign Service, Georgetown University. He is a 30 year veteran of the US Army retiring in 2011 as a Special Forces Colonel with his final assignment serving on the military faculty teaching national security strategy at the National War College. He is a graduate of Miami University in Oxford, Ohio and holds Masters of Military Arts and Science degrees from the US Army Command and General Staff College and the School of Advanced Military Studies and a Master of Science degree in National Security Studies from the National War College of the National Defense University.

He has served in various command and staff assignments in the Infantry in Germany and Korea as well as in Special Forces at Ft. Lewis, Washington, Seoul, Korea, Okinawa, Japan and the Philippines with total service in Asia of more than 20 years. He served on the United Nations Command / Combined Forces Command / United States Forces Korea CJ3 staff where he was a planner for UNC/CFC OPLAN 5027-98 and ROK JCS – UNC/CFC CONPLAN 5029-99 and later served as the Director of Plans, Policy, and Strategy (J5) for Special Operations Command Korea (SOCKOR). From 2000 to 2002 he commanded 1ˢᵗ Battalion, 1ˢᵗ Special Forces Group (Airborne) in Okinawa, Japan during which his operational detachments participated in numerous operations throughout Asia and the Pacific in Korea, Japan, Thailand, Sri Lanka, Bangladesh, India, Indonesia, Malaysia, Australia, Vietnam, and the Philippines, including deployment to Mindanao and Basilan Island for the initial execution of Operation Enduring Freedom – Philippines. He has been the G3 and Chief of Staff of USASOC and Chief of Staff, SOCKOR. He commanded the Joint Special Operations Task Force-Philippines in 2006-2007. He is a fellow at the Institute of Corean-American Studies (ICAS). He is on the Board of Directors of the Committee for Human Rights in North Korea, Small Wars Journal, and the International Council of Korean Studies. He teaches "Unconventional Warfare and Special Operations for Policy Makers and Strategists."

Mr. Mathison Hall

Science Fiction Contest Winner

Senior Analyst

The John Hopkins University Applied Physics Lab

Mathison Hall is a senior analyst and project manager at the John Hopkins University Applied Physics Laboratory, where he works on a wide range of projects for the Departments of Defense and Homeland Security. He is also the lead author and editor of a forthcoming book examining the intersection of resistance movements and the cyber domain. Mathison is an infantry officer in the U.S. Marine Corps Reserve following twelve years of active duty service. He is currently a detachment commander in the 2D Civil Affairs Group and an adjunct instructor for the Marine Corps University.

Mathison' s active duty and reserve tours have included combat and operational deployments to Iraq and aboard ship in the Western Pacific; participation in theater security cooperation exercises in Japan, Thailand, Korea, and Morocco; and instructor tours in Quantico and at the U.S. Naval Academy. Mathison received a B.S. in Mathematics and History from the U.S. Naval Academy in Annapolis and an M.Phil. in Development Economics from the University of Cambridge in England where he was a Nolan Scholar.

Dr. David Bray
Director, Office of Ventures and Innovation, NGA

Dr. David A. Bray was named one of the top "24 Americans Who Are Changing the World" under 40 by Business Insider in 2016. He was also named a Young Global Leader by the World Economic Forum for 2016-2021. He also accepted a role of Co-Chair for an IEEE Committee focused on Artificial Intelligence, automated systems, and innovative policies globally for 2016-2017 and has been serving as a Visiting Executive In-Residence at Harvard University since 2015. He has also been named a Marshall Memorial Fellow for 2017-2018 and will travel to Europe to discuss Trans-Atlantic issues of common concern including exponential technologies and the global future ahead.

David enjoys creative problem solving. He began working for the U.S. government at age 15 on computer simulations at a high-energy physics facility investigating quarks and neutrinos. In later roles, he designed new telemedicine interfaces and space-based forest fire forecasting prototypes for the Department of Defense. From 1998-2000 he volunteered as a part-time crew lead with Habitat for Humanity International in the Philippines, Honduras, Romania, and Nepal while also working as a project manager with Yahoo! and a Microsoft partner firm. Dr. Bray then joined as IT Chief for the Bioterrorism Preparedness and Response Program at the U.S. Centers for Disease Control and Prevention, leading the program's technology response to during 9/11, anthrax in 2001, Severe Acute Respiratory System in 2003, and other international public health emergencies. He later completed a PhD from Emory University's Goizueta Business School and two post-doctoral associateships at MIT and Harvard in 2008.

David likes to be a digital diplomat and a "human flak jacket" for teams of change agents working in turbulent environments. He volunteered in 2009 to deploy to Afghanistan to help "think differently" on military and humanitarian issues and in 2010 became a Senior National Intelligence Service Executive advocating for increased information interoperability, cybersecurity, and protection of civil liberties. In 2012, he became the Executive Director for the bipartisan National Commission for Review of Research and Development Programs of the United States Intelligence Community, later receiving the National Intelligence Exceptional Achievement Medal. He received both the Arthur S. Flemming Award and Roger W. Jones Award for Executive Leadership in 2013. He also was chosen to be an Eisenhower Fellow to meet with leaders in Taiwan and Australia on multisector cyber strategies for the "Internet of Everything" in 2015.

David passions include "near impossible missions" involving humans and technology in challenging circumstances. He has served as the Chief Information Officer for the Federal Communications Commission, leading FCC's IT Transformation since 2013. Through the efforts of a team of positive change agents, he led the transformation of the FCC's legacy IT with more than 207 different systems to award-winning tech. This included rolling-out new cloud-based IT that achieved results in 1/2 the time at 1/6 the cost. He was selected to be one of the "Fedscoop 50" for Leadership in 2014, 2015, and 2016 and the recipient of the Armed Forces Communications and Electronic Association's Outstanding Achievement Award for Civilian Government in 2015. Dr. Bray also received the global CIO 100 Award twice, which usually is awarded to private sector Fortune 500 companies, both in 2015 and 2017, for his transformational leadership.

Mr. James "Hondo" Guerts

Acquisition Executive, U.S. Special Operations Command

James F. Geurts, a member of the Senior Executive Service, is the Acquisition Executive, U.S. Special Operations Command, MacDill Air Force Base, Florida. He is responsible for all special operations forces research, development, acquisition, procurement and logistics.

Mr. Geurts, a native of Charleston, South Carolina, entered the Air Force in 1987 as a distinguished graduate from the Lehigh University ROTC program, where he earned a Bachelor of Science degree in electrical engineering. He has served as an acquisition program manager with engineering and program management leadership positions in numerous weapon systems including intercontinental ballistic missiles, surveillance platforms, tactical fighter aircraft, advanced avionics systems, stealth cruise missiles, training systems, and manned and unmanned special operations aircraft. He commanded an Acquisition Group, served as the Program Executive Officer for Fixed Wing Programs at USSOCOM, and was Commander, Joint Acquisition Task Force Dragon, an elite team of USSOCOM and Service acquisition personnel responsible for executing USSOCOM's most urgent acquisitions in response to wartime Critical Mission Needs Statements. He retired from the Air Force in the rank of Colonel in Jul 2009 after more than 21 years of active duty. Prior to his current assignment, he was the Deputy Director, Special Operations Research, Development, and Acquisition Center, U.S. Special Operations Command, MacDill Air Force Base, Florida.

Dr. Anthony Vinci

Branch Chief, Machine Learning and Analytics GTRI

Anthony Vinci, Ph.D., is the Director of Plans and Programs at the National Geospatial-Intelligence Agency. He is an executive, technology entrepreneur and intelligence officer focused on developing new technologies and approaches to solve emerging, global challenges.

As Director of Plans and Programs, he is responsible for defining the strategic direction of the agency and implementing that strategy. Dr.Vinci's responsibilities include managing the budget, acquisitions, portfolios, technology and R&D of the agency. In support of the director, his mission is to lead NGA into the next generation of geospatial intelligence.

Dr. Vinci is the founder and former CEO of Findyr, a revolutionary technology company which crowdsources data collection from users in over 100 countries. Previously, he was on the executive management team at a company which specialized in machine learning for remote sensing, technology advisor to a private equity firm, and a management consultant at a global consulting firm serving commercial businesses and government entities focused on implementing change.

Earlier in his career he served with the Department of Defense in Iraq, Africa, Asia and throughout the Middle East.

Dr. Vinci received his Ph.D. in International Relations from The London School of Economics and studied philosophy at Reed College and Oxford University. He performed fieldwork throughout Sub-Saharan Africa, the Middle East, and Southeast Asia. Dr. Vinci has published extensively on topics of security and strategy. He is a Fellow member of The Explorers Club.

Mr. Richard Kidd

Deputy Assistant Secretary of the Army (IE&E), Strategic Integration

Mr. Richard Kidd serves as the Deputy Assistant Secretary of the Army for Strategic Integration. In this roll he leads the strategy development, resource requirements, and overall business transformation processes for the Office of the Assistant Secretary of the Army for Installations, Energy and Environment. He is also responsible for developing and monitoring performance metrics for the Army's installation management community as well as leading a strategic effort to examine options for future Army installations.

This is Mr. Kidd's fourth assignment as a Senior Executive within the Federal Government. Previously Mr. Kidd has held Senior Executive assignments in the Department of State, the Department of Energy and the Department of the Army. Additionally, he was selected to serve on assignment to the White House, where he created and led the Federal Permitting Improvement Steering Council.

Mr. Kidd graduated from the United States Military Academy in 1986 and served as an Infantry Officer in the United States Army until 1991. After receiving a Master's Degree in Public and Private Management from Yale University, he joined the United Nations in 1993. For the next six years he held a variety of international assignments, principally in war affected regions of the world to include service in Rwanda, Bosnia, and Afghanistan. After returning to the United States, he helped to start an international non-profit organization modelling the effects of conflict upon civilian communities.

Following the events of 9/11 he returned to public service where he joined the Department of State's Bureau of Political Military-Affairs in 2001. Initially he worked on Afghan policy issues before serving as a Special Assistant, Office Director and Acting Deputy Assistant Secretary.

In July of 2008 he transferred to the Department of Energy's Office of Energy Efficiency and Renewable Energy where he was responsible for leading the Federal Energy Management Program (FEMP). In this position he helped to craft energy policy for Federal agencies, contributed to Presidential Executive Orders and assisted all Federal agencies in meeting statutory energy and sustainability requirements in order to promote energy security and environmental stewardship.

Mr. Kidd returned to the Army as a civilian executive in October of 2010 as the Deputy Assistant Secretary for Energy and Sustainability. In this position he was responsible for the oversight and implementation of all programs and initiatives related to Energy Security and Sustainability.

Mr. Kidd was selected to join the White House staff in July of 2016 where he was responsible for standing up a new Federal entity, the Federal Permitting Improvement Steering Council (FPISC). He served as that entity's first Executive Director before once again returning to the Army in January of 2017.

Dr. Sokwoo Rhee

Associate Director of Cyber-Physical Program, National Institute of Standards and Technology

Dr. Sokwoo Rhee is Associate Director of Cyber-Physical Systems Program at the National Institute of Standards and Technology (NIST). He is currently leading the Global City Teams Challenge (GCTC) which aims to create a replicable and scalable model for collaborative incubation and deployment of Internet of Things (IoT) and Cyber-Physical Systems (CPS) solutions to improve the quality of life in smart cities around the world. He previously served as a Presidential Innovation Fellow on CPS, a program by the White House Office of Science and Technology Policy. During his fellowship, he co-led the SmartAmerica Challenge, which brought together IoT technologies and CPS across the nation to demonstrate how they can provide concrete examples of the socio-economic benefits. Prior to joining US government, he was Co-founder and CTO of Millennial Net, Inc., which was one of the first to successfully commercialize low-power wireless mesh/sensor network and Internet of Things technology from academia. His work and achievements have been recognized through awards including MIT Technology Review's Top Innovators under 35 and Red Herring's Top 5 Innovators. He holds more than a dozen US and International patents and numerous publications on wireless networks, biomedical sensors and embedded systems. He received his M.S. and Ph.D. in Mechanical Engineering from Massachusetts Institute of Technology

Mr. Michael Assante
Director, Industrials & Infrastructure
CSIS

Michael Assante is currently the SANS lead for Industrial Control System (ICS) and Supervisory Control and Data Acquisition (SCADA) security and cofounder and chief security strategist of NexDefense, an Atlanta-based industrial control system (ICS) security company. He has served as vice president and chief security officer of the North American Electric Reliability Corporation (NERC), where he oversaw industry-wide implementation of cybersecurity standards across the continent. Prior to joining NERC, he held a number of high-level positions at Idaho National Labs and served as vice president and chief security officer for American Electric Power. Mr. Assante's work in ICS security has been widely recognized, and he was selected by his peers as the winner of InfoSecurity magazine's security leadership award for his efforts as a strategic thinker. The RSA 2005 Conference awarded him its outstanding achievement award in the practice of security within an organization.

Mr. Assante has testified before the U.S. Senate and House of Representatives and was an initial member of the Commission on Cyber Security for the 44th Presidency. Before his career in security, he served in various naval intelligence and information warfare roles, where he developed and gave presentations on the latest technology and security threats to the chairman of the Joint Chiefs of Staff, the director of the National Security Agency, and other leading government officials. In 1997, he was honored as a Naval Intelligence Officer of the Year. He holds a B.A. in political science from Miami University in Oxford, Ohio.

Ms. Grace Simrall
Chief of Civic Innovation, Louisville Metro Government

Grace Simrall was named Chief of Civic Innovation for Louisville Metro Government in August 2016. Prior to this role, Simrall served as Executive Director of Innovation at Care Innovations, a wholly owned subsidiary of Intel, where she was responsible for the company's innovation and analytics initiatives. In 2010, she founded iGlass Analytics, a startup focused on delivering data management and analytics solutions in the healthcare technology space. In that role, she worked with payers, providers, and accountable care organizations (ACOs) to apply enterprise data management design principles and cutting edge analytical tools to their specific challenges.

Simrall earned a bachelor's degree in the geophysical sciences from the University of Chicago and a master's degree in mechanical engineering from the University of Louisville's Speed School of Engineering

Jeffrey Becker

Call for Papers – Selected Submission
President, Context LLC

Jeff Becker is President and senior analyst at Context LLC, a defense consultancy based in Southeast Virginia. Mr. Becker is currently the Senior Futurist at the Joint Concepts Division of the Joint Staff J7. Mr. Becker has over 19 years of direct experience conducting and managing future military studies, analysis, and experimentation projects. He has provided analytic support to a wide range of clients interested in considering the implications of strategic and military change for the structure and function of military forces and national strategy.

His analysis has been part of key studies, concepts, and other efforts within the Joint Staff, U.S. Joint Forces Command, NATO/Allied Command Transformation, OSD/Net Assessment, the Naval Postgraduate School, and the Army and Navy. Mr. Becker has worked with a wide range of foreign partners on joint analytic projects abroad, including the NATO Alliance, the U.K., Canada, France, Germany, Chile, Peru, Indonesia, and Kyrgyzstan.

Mr. Becker was the primary author of the Joint Staff's 2016 deep futures study, *Joint Operating Environment 2035: The Joint Force in a Contested and Disordered World* which surveys science and technology, human, and geopolitical trends and develops their military implications for the Joint Force. He has written and edited numerous articles on future military challenges, including for example, On "Predicting Future War, in *Parameters*, Contexts of Future Conflict and War in *Joint Force Quarterly* and "Strategic Trends and Drivers" in Stanford University Press's *Securing Freedom in the Global Common.* He has written many articles focused on the future military implications of technological developments, including most recently, speculative articles on the future of high tech terrorism and the use of reusable rocket boosters as part of a theater strike system.

Radhika Roy
Call for Papers Selected Submission
RDECOM CERDEC

Radhika Ranjan Roy is an electronics engineer (research), US Army Research, Development, and Engineering Command (RDECOM), Communications–Electronics Research, Development, and Engineering Center (CERDEC), Space and Terrestrial Communications Directorate (S&TCD) Laboratories, Aberdeen Proving Ground (APG), Maryland, since 2009. Before joining to US Army Research, he worked in various capacities in CACI, SAIC, AT&T/Bell Laboratories, CSC, and PDB since his graduation. He earned his PhD in electrical engineering with major in computer communications from the City University of New York, New York, in 1984, and MS in electrical engineering from the Northeastern University, Boston, Massachusetts, in 1978. He received his BS in electrical engineering from the Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, in 1967. He has published more than 50 technical papers. He is holding and/or submitted over 30 patents. He authored two books titled Handbook of Mobile Ad Hoc Networks on Mobility Models in 2010 and Handbook on Session Initiation Protocol: Networked Multimedia Communications for IP Telephony in 2016.

Dr. James Giordano
Chief of Neuroethics Program, Georgetown University

James Giordano PhD is Professor in the Departments of Neurology and Biochemistry, Chief of the Neuroethics Studies Program of the Pellegrino Center for Clinical Bioethics, and Co-director of the O'Neill-Pellegrino Program in Brain Science and Global Health Law and Policy at the Georgetown University Medical Center, Washington DC. As well, he is Distinguished Visiting Professor of Brain Science, Health Promotions and Ethics at the Coburg University of Applied Sciences, Coburg, Germany, and was formerly Fulbright Visiting Professor of Neuroscience and Neuroethics at the Ludwig-Maximilians University, Munich, Germany.

Prof. Giordano is a Research Fellow of the European Union Human Brain Project, working as team leader to define specific technical, ethical and policy related issues arising in and from dual-use applications of brain sciences. He currently serves as an appointed member of the Department of Health and Human Services Secretary's Advisory Council for Human Research Protection; and is an appointed member of the Neuroethics, Legal and Social Issues Advisory Panel of the Defense Advanced Research Projects Agency (DARPA). In addition, he served as Senior Science Advisory Fellow to the Strategic Multilevel Assessment Group of the Joint Staff of the Pentagon, serving to inform and guide the Joint Staff about developments in brain science that are of importance to military medicine, national security, intelligence and defense.

A neuroscientist and ethicist with over 30 years' experience in basic and translational research, Prof. Giordano is the author of over 250 publications and 7 books in neuroscience and neuroethics, and 12 governmental whitepapers on bioscience, biotechnology and biosecurity. His recent book *Neurotechnology in National Security and Defense: Practical Considerations, Neuroethical Concerns* (CRC Press) is widely used in a number of national defense, security and policy curricula.

Named as a Distinguished Lecturer of both *Sigma Xi – The National Scientific Honor Society*, and the *Institute for Electrical and Electronics Engineers* (IEEE), Prof. Giordano was named a *Presidential Point of Light* by President George H. W. Bush for recognition of his contribution to science and society, and was elected to the European Academy of Science and Arts in acknowledgment of his work in brain science and ethics.

LTG (Ret) James Dubik
Center for a New American Security

LTG Dubik retired from the U.S. Army in July 2008. He is a Senior Fellow at the Institute for the Study of War and is a Professor and Director of Teaching at Georgetown University's School of Foreign Service's Security Studies Program, as well as a member of the Council on Foreign Relations, the National Security Advisory Council, and the U.S. Global Leadership Coalition.

STRATEGIC STUDIES PROGRAM STUDENT

Bio coming soon

STRATEGIC STUDIES STUDENT

Bio coming soon

Dr. Jesse Kirkpatrick

Assistant Director, Institute for Philosophy and Public Policy, George Mason University

Jesse Kirkpatrick is Assistant Director of the Institute for Philosophy and Public Policy at George Mason University, an affiliate Assistant Research Professor in Mason's graduate neuroethics concentration, and a Politico-Military Analyst for Johns Hopkins University's Applied Physics Lab. He received his Ph.D. from the University of Maryland, where he was awarded a Hoobler Fellowship for his work on postconflict justice and public policy. Jesse specializes in political and moral philosophy, with an emphasis on the just war tradition, emerging technologies, human rights, and security studies. Prior to joining the Institute, Jesse was an Assistant Professor at Radford University and a Research Fellow at the US Naval Academy.

Professor Linda MacDonald Glenn
Institute for Ethics and Emerging Technologies

Linda MacDonald Glenn is an attorney-at-law, bioethicist, educator, and consultant. She attended college at Rutgers University in New Jersey, received an A.B in Human Communication, with a minor in Womens' Studies, then attended Western New England College in Massachusetts, where she received her J.D. She practiced law in Rhode Island from 1981 to 1999, where she served as a Special Assistant Attorney, Legal Counsel to the House Committee on Health, Education and Welfare, and Assistant City Solicitor to the City of Warwick. She was also in private practice, where she was the lead attorney in several cutting edge bioethics cases. She graduated from McGill with her degree in Bio-medical Ethics in 2002. After a one year fellowship with the American Medical Association Institute for Ethics in Chicago, Mrs. Glenn continued a small private practice and taught at the University of Vermont College of Nursing and College of Medicine. She was also appointed a faculty position at the Alden March Bioethics Institute at Albany Medical Center in New York. In 2012, after lecturing and advising at Singularity University in Mountain View, CA. She started teaching at California State University Monterey Bay in 2013. Her academic research encompasses the legal, ethical, and social impact of exponential technologies and "evolving notions of personhood."